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FACTS AND OBSERVATIONS

REGARDING

**EPIDEMIC CHOLERA,**

AS IT RECENTLY APPEARED IN

PRESTONPANS AND ITS VICINITY.

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FACTS AND OBSERVATIONS  
 REGARDING THE DISEASE CALLED  
**EPIDEMIC CHOLERA,**  
 AS IT RECENTLY APPEARED IN  
 PRESTONPANS AND ITS VICINITY.

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BY JAMES ECKFORD, SURGEON,  
 AND MEMBER OF THE PRESTONPANS  
 BOARD OF HEALTH.

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Εθνησκον δέ, οἱ μὲν, ἀμελεία, οἱ δὲ, καὶ πάνυ θεραπευόμενοι ἔν τε οὐδὲν  
 κατέστη ἴαμα, ὡς εἰπεῖν, ὃ, τι χρεῖν προσφέροντας ὠφελεῖν τὸ γὰρ τῷ  
 ξυνεγεγκόν, ἄλλον τοῦτο ἐβλαπτε.—*Thucyd.*

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EDINBURGH :  
 M'LACHLAN & STEWART,  
 LONGMAN, REES, ORME, BROWN AND GREEN, LONDON.

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1832.

SCOTTISH AND AMERICAN

EPIDEMIOLOGICAL

REVIEW

Vol. I. Part I. 1844.

Printed by James Colston, East Rose Street, Edinburgh.

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Edinburgh.

TO  
JAMES WILLIAMSON, Esq.  
RESIDENT MEDICAL PRACTITIONER,  
AND TO THE  
GENTLEMEN COMPOSING THE BOARD OF HEALTH  
AT PRESTONPANS,  
WITH ADMIRATION FOR THE WISDOM WHICH THEY EXHIBITED  
IN DIRECTING THE OPERATIONS OF OTHERS ;  
WITH RESPECT FOR  
THE HUMANITY, THE COURAGE, AND THE ASSIDUITY  
WHICH THEY DISPLAYED  
IN ENTERING THE INFECTED DWELLINGS  
TO ASCERTAIN THE NECESSITIES OF THE SUFFERING POOR,  
IN ORDER TO  
PROVIDE A REMEDY FOR THEIR DISTRESSES ;  
AND WITH GRATITUDE  
FOR THE COUNSEL AND THE PERSONAL ASSISTANCE  
WHICH LIGHTENED HIS PROFESSIONAL LABOURS,  
DURING THE PREVALENCE OF THE  
**Malignant Cholera**  
IN THEIR TOWN AND ITS VICINITY,  
THE FOLLOWING PAGES ARE INSCRIBED BY  
THEIR OBEDIENT HUMBLE SERVANT,  
THE AUTHOR.

16, BROUGHTON PLACE, }  
EDINBURGH.

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## INTRODUCTION.

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AT first sight it might appear, that the immense quantity which has been written on CHOLERA, ought to deter any one from taking up a subject so often handled, and adding to the mass which has been thrown upon the attention of the public. But the great number of authors on this subject proves only its importance, and the diversity of their sentiments shews, that the truth regarding it is still unestablished ; and, therefore, that it is incumbent on every one, who conceives that he has any thing important to communicate, to come forward—unintimidated by so unworthy a feeling as the fear of wearying his reader, and to contribute what, if it fail in deciding points much debated, may at least add to that stock of accumulated experience, which is generally the parent of truth. I am the more induced to this, that the practical remarks contained in the following pages are the result not of speculative hypothesis, but of actual observation, in a district in which the proportion of fatal cases of cholera was considerably less than perhaps in any other place since it appeared in this country ; and that the modes of treatment, which I was induced to adopt, on *seeing* the disease, were very different from what I

had conceived applicable, from reading descriptions of its symptoms, and the remedies recommended, whether by individual physicians, or more authoritatively by formally constituted bodies of medical men.

So sudden is the attack of this disease, so frightful its symptoms, so brief its course, and so fatal in many instances its termination, that medical men, on its first appearance, were taken by surprise, and naturally enough were anxious to provide a *specific* antidote, for what seemed to operate as a *specific poison*, to procure something which like a holy charm might counteract what almost resembled the working of a malignant demon, to resist and overcome by a *coup de main* an enemy whose onset was so impetuous, rather than to reduce him by the arts of a more ingenious but less simple warfare. To this feeling is to be attributed the immense number of individual remedies, which individual writers have represented as proper for the cure of the disease in all cases indiscriminately, and hence the blind, and, I fear, often fatal adherence of many practitioners to one supposed remedy, or one method of treatment, without adverting to peculiarities of the constitution and circumstances of the patient, or of the disease itself. Previous to seeing the disease, I was like others prepared to expect that some one medicine or mode of treatment either had been or would be discovered, which might be applicable to almost all ; but after witnessing one or two cases, I was convinced of the folly of such expectations, and satisfied that, in this, as in other diseases, for example, continued fever, the cure is to be accomplished only by observing the peculiar features of each case, and treating them accordingly ; a view which, I trust, will be more fully



brought out in the subsequent narration of cases, with a description of their treatment, and final issue.

Before entering on the practical part of the essay, it may not be uninteresting to premise a very brief and general history of the disease.

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## HISTORY OF CHOLERA.

Every medical man is aware, that this disease is named from *χολη*, bile ; as the Greeks, who first applied this term to it, conceived its prominent features to be a vomiting and purging of that humour. Modern observers having ascertained that, neither in the matter vomited, nor in the dejections, can the least trace of bile be discovered, and that its re-appearance is to be hailed as a forerunner of returning health, have denied the identity of the disease now known by this name, with that which the ancients described under the same appellation. But with the single exception of the mention of bile being the fluid discharged, all the other symptoms so exactly correspond in both instances, that I am more willing to suppose, that the ancients ignorantly applied the name of bile to what was not bile, than to doubt the identity of the diseases described. This opinion I consider the more probable, from the fact, that the description which the ancients have given of the fluid vomited and passed in the dejections, and which they have termed bile, does not correspond with the properties or appearance of this secretion as ascertained by the more accurate science of modern times. The following passage, translated from Celsus, will il-

illustrate both the identity of the disease, and the error in naming the evacuated fluid bile\* :—

“ Cholera seems to be a disease equally of the stomach and of the intestines. For there is at once purging and vomiting; and besides, there is a flatulence, the bowels are griped, *bile* is discharged both upwards and downwards, first *resembling water*, then as if fresh meat had been washed in it, sometimes *white*, sometimes black, or of variegated colour. For this reason (the evacuation of this fluid misnamed bile) the Greeks have called the disease Cholera. And in addition to the symptoms already detailed, the *hands and legs are often cramped*, the thirst is urgent, the individual faints, (or the animal powers sink.)† When these occur together, it is not to be wondered at, if the person *die suddenly*.” More recent but still remote writers, labouring under the same misapprehension regarding the nature of the evacuated fluid, have mentioned other symptoms characteristic of this disease, leaving little room to suppose that this scourge of mankind is of modern origin. For example, the burning sensation in the region of the stomach, which I have observed to be present in almost every case, is taken notice of by Bontius and Sydenham, along with the other pathognomonic characters of this malady. Mention has been made of the same disease by more recent writers in succession, as Paisley and Curtis; but it is not till within these fourteen years that it has assumed so terrific a character, and spread so widely, as to carry devastation and terror into the habitations of a large proportion of the human

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\* Cels. Lib. IV. Cap. xi.

† Anima deficit.



race. The disease mentioned by the earlier authors must have been less malignant in degree than that, with which we have unfortunately become acquainted, as the fatal termination of it in some instances within twenty-four hours is noticed by them as something striking and fearful, whereas the malady, which is now raging, has very frequently proved fatal within the space of six hours ; nay, some are said to have been seized with the most depressing form of it, while employed unsuspectingly in their ordinary occupations, and to have fallen down in fields and streets, and expired within a few minutes. The birth-place of the present epidemic was Jessore, about a hundred miles north-east of Calcutta, where it first appeared in the month of August, 1817. Following the line of human communication by roads, and rivers, and over seas from port to port, it has travelled successively from east to west through the great towns and more populous villages of the East Indies ; occasionally diverging at the same time by collateral lines of communication, but steadily pursuing this latitudinal direction. In 1821 it first made its appearance on the borders of the Persian Gulf, after having raged in the earlier months of that year at Bombay. In 1823 it extended itself in one direction to the shores of the Caspian Sea, and in another as far as the Mediterranean, making an apparent stand at Astracan. The talented editor of Dr Good's Study of Medicine, published in 1829, with a seeming mixture of fear and hope here remarks, " it seems, therefore, to have very closely threatened Europe." The worst apprehensions that could have been entertained under such circumstances have since been verified ; for from Astracan, pursuing the course

of the Volga, which traverses the largest towns in the empire of Russia, it ravaged these towns in succession, and diverging by three different roads, it devastated the north, south, and centre of Russia simultaneously. In the thickly populated districts of western Europe it found an abundant pabulum, and an uninterrupted chain of positions, in which it successively established itself; and that it spread itself by the intercourse of men with each other seems to be settled beyond all question by the fact, that when it passed over from the Continent to our island, it had been last noticed in a seaport on the one side, and first appeared in a seaport on the other side of the intervening ocean, between which two ports commerce had established a very frequent and direct communication. Having thus, in attempting briefly to sketch its history, thrown out a few general hints as to its contagious nature, I shall endeavour to establish the truth of that position by entering into a more minute consideration of its peculiar character, and by stating a few facts as they came under my own observation, which may assist the reader in coming to a correct conclusion.

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### CHOLERA A CONTAGIOUS DISEASE.

With a mind totally unbiassed by any preconceived opinion on the subject, and prepared to adopt that method of treatment which should be best recommended by its results, I proceeded, on the 24th of January, to the village of Prestonpans, where the cholera spasmodica had then recently manifested itself.



Desirous of adopting every means for preventing the extension of the disease, I considered it an object of the first importance to ascertain, if possible, its contagious or non-contagious nature; and with this view, my enquiries were directed to discover whether its first appearance in this village could be traced to any communication with an infected person or district. That I succeeded in doing so, as I conceive, beyond all controversy, the following facts will amply testify: The first of its victims was a man of the name of Renton. This individual had spent the 15th of January at Tranent, where the disease at that time prevailed, and, though usually sober, in accordance with the barbarous and deplorable custom in Scotland at that season of the year, had passed the day in dissipation and intemperance. He came on the following day (the 16th) to Prestongrange, an outskirt of Prestonpans, bringing with him a child, who, two days after his return from Tranent, was seized with diarrhæa, and Renton himself was attacked with malignant cholera, and died of it on the 20th, after having complained much of want of appetite and the symptoms of disordered digestion ever since his arrival from Tranent. On the afternoon of the same day, two persons, the son and daughter of a Mrs Allan, the latter of whom had been engaged in attending on Renton, and employed in rubbing him, were attacked by the disease; and the same evening, Renton's child, who had accompanied him from Tranent, was seized by it in its most malignant form, and died on the following day (Sunday, 21st.) Mrs Allan's house is situated not more than twenty yards from Renton's; and on the day on which he was buried, which was the same as that on which his child died, (Sunday, 21st,)

Mrs Steel and her neighbour, who occupied the same tenement with Mrs Allan, while gazing on Renton's funeral, fell down in a syncope, on which vomiting and purging supervened ; she herself confessed to me afterwards, that she had been some days before in a house in Fisherrow, whose inmates were affected with cholera, of which some of them had died six days previously. On the same day, (Sunday 21st) Robert Smith was attacked. This man most pertinaciously persisted in asserting his freedom from contact with any infected person ; but upon instituting an enquiry, I found that his wife had been twice to see Renton during his illness, taking a child with her, Smith's house being nearly opposite to Renton's, at a distance of about ten yards. Mrs Smith\* was seized with the disease on the following Tuesday. As the number of the cases increased, they became more distinctly traceable to communication with infected persons or districts, so much so, that I very soon became completely convinced of the highly contagious nature of the disease myself ; and the facts which I have submitted to the attention of the reader will, I presume, prove sufficient to carry conviction to the mind of the most sceptical. In order, however, to assist him in coming to a correct conclusion on the subject, and to place the question in a still clearer light before him, I have drawn up the following

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\* This woman's case was the first which I was called upon to treat ; I have, therefore, detailed the result of my observations upon it in a detached form, they will be found in a later part of the Essay.



*Tabular View of the Progress of Cholera  
Spasmodica.*

1st, In ten families occupying *one* apartment only,  
contrasted with the same

2d, In ten do. occupying *two* do.

1st, In ten families occupying *one* apartment only,

Name.	Of how many individuals composed.	No. of persons attacked.	No. of persons not attacked.
Smith, . . . .	6 . . . .	4 . . . .	2
Shaw, . . . .	2 . . . .	2 . . . .	0
Johnston, . . .	3 . . . .	2 . . . .	1
Peden, . . . .	6 . . . .	4 . . . .	2
Plain, . . . .	4 . . . .	2 . . . .	2
Adams, . . . .	4 . . . .	2 . . . .	2
Spence, . . . .	4 . . . .	2 . . . .	2
T. Thompson, 2	. . . .	1 . . . .	1
C. Smith, . . .	2 . . . .	1 . . . .	1
Sharp, . . . .	4 . . . .	1 . . . .	3
	<hr/> 37 <hr/>	<hr/> 21 <hr/>	<hr/> 16 <hr/>

From this table it will be seen, that the number of persons attacked exceeded those that escaped by more than *one-fourth*; on the other hand, wherever isolation could be carried into effect, wherever the sick could be separated from the healthy, and the communication between them cut off or interrupted, though ever so partially, a considerable diminution took place in the number of persons affected, as the following table will amply testify :—

## 2d. In ten families inhabiting two apartments—

Names.		No. of those attacked.	No. of those not attacked.
Baillie, . . . . .	8 . . . . .	2 . . . . .	6
Robertson, . . . . .	5 . . . . .	1 . . . . .	4
Thompson, . . . . .	5 . . . . .	1 . . . . .	4
Taylor, . . . . .	5 . . . . .	2 . . . . .	3
Hardie, . . . . .	3 . . . . .	1 . . . . .	2
Steele, . . . . .	2 . . . . .	1 . . . . .	1
Brown, . . . . .	4 . . . . .	2 . . . . .	2
C——, . . . . .	2 . . . . .	1 . . . . .	1
Boulton, . . . . .	5 . . . . .	3 . . . . .	2
Moir, . . . . .	4 . . . . .	3 . . . . .	1
<hr/>		<hr/>	<hr/>
43		17	26
<hr/>		<hr/>	<hr/>

From which it will be seen, that the number of those who escaped exceeded that of those attacked by nearly *one-third*.

The result of the contrast between the too foregoing tables will doubtless be to prove satisfactorily the correctness of the view I have taken of the disease; had any *selection* of cases taken place, the truth of the position I have adopted would have been much more distinctly marked; but as I had no preconceived opinion to gratify, no favourite hypothesis to establish, no boldly uttered dogma to defend, I took the data whereon to form my inferences *indiscriminately* from among the houses where the pestilence had prevailed; wherever these inferences led I was prepared to follow, and the conclusion at which I have arrived is before the reader; with a few more remarks, I shall dismiss



this branch of the subject. If the cholera were merely a non-contagious epidemic, depending on and produced by any atmospheric change, electrical agency or geologic derangement, were it diffused or extended by air, earth or water, could we “tax the elements with the unkindness” of its propagation, then instead of confining its visitations for weeks to an inconsiderable town, or paltry village, common sense would teach us to expect, that whole districts and entire provinces would be simultaneously subjected to its influence, and that in particular, in our own narrow isle, its ravages would have extended at once from sea to sea. True it is that its progress in other countries has been marked by a rapidity which would seem to claim for it the attributes of an epidemic disease, but if we consider the internal economy of those countries, if we reflect that most if not all of them, where the disease has assumed the appearances now alluded to, are generally speaking either entirely destitute of any internal police, or, if they do possess any, that it is valueless from its inefficiency; if we take into account the cumbrous and unwieldy machinery of their governments, and the supineness and ignorance of the executive portion of them, and above all the obstacles which superstition erects against the establishment of any thing in the shape of Boards of Health, or Cordons Sanitaires, we shall cease to wonder at the rapidity or destructiveness of its career. And even in Hindoostan itself, the very store-house for the arguments of the anti-contagionists, where the erratic course of the Cholera, and the eccentricity of its progress is triumphantly pointed to by them as an irrefragable proof in favour of their theory, we maintain that circumstances

might be adduced, which make at least as much for us as for them, and that very eccentricity of which they boast so much, is one which pleads as powerfully on our side as on theirs. How, we are entitled to ask, has one single city, standing in the very midst of a province as it were inundated by the disease, hemmed in on every side by its pestilential influence, been preserved from its contamination? and standing in the very line of march, so to speak, of the poisonous blast, with a low marshy situation, narrow filthy streets, and a dense population, ill fed, and miserably clothed, with all these “appliances and means to boot,” inviting its approach, how has it escaped its visitations? how can we account for it unless upon the supposition, that by some fortunate accident, or judiciously framed and strictly-enforced regulation, the intercourse between it and its infected neighbourhood has been either altogether cut off, or deprived of its noxious and dangerous features; in conclusion I may observe, that from whatever cause this fearful malady had its origin, by whatever features it might have been characterised on its *first* appearance, and whatever modifications these features might have undergone through the influence of climate, or the difference in the habits and pursuits of its victims, questions which are still, and probably ever will be inexplicable and unsolved, its undoubted character, as it has recently exhibited itself in this country, is decidedly that of a highly contagious disease, and to use the words of one of the ablest and most talented writers,\* who have written upon this much disputed

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\* D. M. Moir, Esq. Surgeon, author of “The Ancient History of Medicine,” and Secretary to the Musselburgh Board of Health.



subject. “ The fact is that cholera will not where  
 “ abate or pass away, while a victim susceptible of its  
 “ influence remains, provided such be exposed to its  
 “ contagion ; and no doctrine more dangerous or de-  
 “ structive to the safety of society can be promul-  
 “ gated.”

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### CHOLERA.—A DISEASE OF DEBILITY, with some General Remarks on the Efficacy of Bloodletting.

The judicious and successful treatment of cholera, depends much upon the view we take as to its character as a disease of debility, or not ; and considerable mischief has arisen from the erroneous opinions of some practitioners on this point. Impressed with this consideration, I have given it all the attention of which I am capable, and have come to the conclusion, that cholera may be regarded as a disease of general debility either natural or accidental ; of these two kinds, the former is that which has come by far the more frequently under my own observation, and may be considered as existing at all times in various and numerous constitutions ; as this kind of debility is traceable to one of three primary causes, or to the whole three complicated and combined, I place them in order as follows.

- 1st. Natural delicacy of constitution,
- 2d. Intemperance,
- 3d. Bad or insufficient diet.

The celebrated Dr Baillie in his valuable work on Morbid Pathology, has shown that in people of intem-

perate habits, the liver is almost invariably tuberculated, and most Indian practitioners with whom I have conversed on the subject, affirm, that generally speaking, those labouring under Hepatic affections are the greatest victims of this disease, and most susceptible of its attacks when it is epidemical; and when we take into account, how much this organ is affected in the disease, we shall cease to wonder that such is its selection.

Among the most prominent causes of accidental debility, I class,

1st. Excessive evacuations and fatigue.

2d. Fear, or any other depressing passion, and

3d. Cold, and perspiration suddenly obstructed.

In short whatever exhausts the vital powers, or diminishes the nervous tone predisposes to cholera, and whatever cause renders us liable to an attack of fever, will also induce a susceptibility to the visitations of this disease; when however an actual attack of the disease has taken place, it is of the utmost consequence to distinguish between a real and a morbid debility, since the same mode of treatment which can alone save the patient in the latter, would in the former inevitably hasten the progress of the malady to a fatal termination, a fact which must be sufficiently obvious to every one who considers for a moment the vast difference in its effects. In a morbid debility it is very evident that the powers of life, even though assisted by strong stimulants, are insufficient to overcome the congestion of the internal organs, and restore the circulation in the surface of the body and in the extremities, and while the large viscera remain engorged and o'erglutted by the thick and viscid blood thrown



in upon them from the external surface, and their vital powers overwhelmed and paralysed, of course their functions of secretion must be impaired and arrested, in consequence of which they are unable to remove the load which oppresses them by one of the modes in which congestion of secreting organs is overcome. In cholera asphyxia the large vessels, especially the venous trunks and right cavities of the heart are so engorged with blood, as to be unable to re-act upon the distending fluid, and throw it into the extreme vessels of the secreting organs, and external surface ; and here I am naturally called upon to speak of the effects of bloodletting in this disease, and of the propriety of its employment. The opinion as to the necessity of its use seems to have been very prevalent among most of the medical practitioners who have been called upon to treat this malady, but mistaking the stage in which alone its exhibition would have been beneficial, or incapable of distinguishing a real from a morbid debility, and so suffering themselves to be deterred from the use of the lancet by the *apparent* weakness of the patient ; they have either converted what might have been an infallible specific into a deadly poison, and so accelerated the patient's fate, or they have permitted the golden opportunity to pass away in a vain dependence on the use of stimulants, for the removal of the congestion of the heart and larger vessels, of which I have before spoken. From my own observation I do not hesitate to affirm, that I conceive stimulants, both external and internal, would in general be found insufficient to remove this congestion, and therefore the value and importance of venæ-section in this stage of the disease is decidedly apparent,

for if active vascular depletion be resorted to, before these vessels become so exhausted as to be unable to recover their vitality, it will lessen the repletion of the heart and large vessels, and enable them to act with redoubled energy upon their remaining contents, and divert the flow of blood from these to the external parts. Stimulants, and stimulating frictions may be employed to rouse the vital powers of the system, but unless we have recourse to blood-letting when the burning sensation is experienced at stomach, depending on the excessive engorgement, for indemnification, we shall only convert a simple congestion into a case of inflammation and congestion : To relieve the irritation under which the patient now labours, opium would be useful were it an inflammatory disease, as it would then, to use the words of a celebrated physician “ spend itself in allaying the pain” and very large doses might be given not only without danger, but with the happiest results ; but if there be any tendency to congestion, in the brain, every skilful practitioner must well know it would be highly prejudicial. To support the rallying powers, and give to their exertions still further effect, it will be necessary to excite the functions of the liver and other secreting organs. How may this be best accomplished ? By administering cathartics with calomel and opium. To diminish the irritancy of these medicines, opium alone by acting as a sedative, and allowing the vessels a short repose to re-act with renewed energy, and increased vigour, will be found a sovereign remedy in the milder form of the disease, but in the malignant cholera it is unquestionably extremely hazardous, if not decidedly injurious. When the malady assumes this aspect, it will, I conceive be



very evident, that the more speedily the functions of all the viscera are excited, and restoration to healthy discharges procured, the less danger is there of the patient sinking, because that watery evacuation which has taken place must actually proceed from the mucous membrane, the fluid part of the blood being forced through its vessels instead of its own peculiar secretion ; therefore when the healthy secretion is restored, we may expect less of the morbid one which is evacuated, and the morbid matter may thus be got rid of by a copious flow of natural secretions ; to effect this “ consummation so devoutly to be wished,” it will be necessary to combine calomel with a cathartic. The propriety of the view I have here taken of the disease, will, I imagine, become more decidedly apparent to the reader by attending to its peculiar character as portrayed in its more prominent features, which I shall attempt to develope in the following pages, and of which I am now immediately about to treat.

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The AUTHOR'S REASONS for subdividing CHOLERA  
under the head of DIARRHÆA.

When we consider the important functions of the digestive tube, and that it is the outlet by which many diseases are altogether expelled, or, by being acted upon by proper medicines, greatly ameliorated, the necessity of paying the closest and most minute attention to its evacuations, in most diseases will, it is presumed, be readily acknowledged. In the malady now under consideration, it will be found of the highest importance,

inasmuch as no inconsiderable number of cases have occurred, where the diseases have so very closely resembled cholera in their symptoms ; and on the contrary, where cholera has assumed all the characteristics of other diseases, that no other way existed of distinguishing between them, but by the appearances of the evacuations by stool. Malignant cholera, I consider to be the sequel of diarrhæa, in the same manner as malignant fever is too frequently the result of an incipient mild one, which, if it had been subjected to medical treatment on its first indication, might have had a very different termination. Fevers have been classed into simple continued, typhoid, and congestive, but every medical man well knows, that any of these when neglected, is apt to run into the malignant form, and although, if called upon to attend a patient, in whom symptoms of simple continued fever had manifested themselves, he could not so far usurp one of the attributes of deity as to prognosticate its progress, unless checked by judicious treatment, to the typhoid or malignant form, he would nevertheless feel himself called upon to use every means of arresting it in its first stage ; in like manner, had I occasion to visit a patient suffering from a gruelly or watery looseness, I should consider myself bound to endeavour to bring it to a favourable termination by rational medical treatment, for which end my first object would be to try an inspection of the evacuations, to ascertain its true character, considering as I do an examination of the dejections to be as essential in this disease as that of the sputa in pneumonia, or any bronchial affection, and I will venture to affirm, that a better diagnosis and prognosis can be formed in this, than in any other way ; and I cannot too strongly



impress upon my medical readers that an inattention to cholera in its first stages, will be productive of more mischief than a similar neglect in any other disease. I am well aware, that some practitioners will not admit the existence of cholera, until external changes and indications had supervened, and rendered it so manifest as not to be mistaken by the most ignorant and uninformed bystander, but the skill of the physician, I imagine, will be much better employed, be more satisfactory to his own breast, and far more highly appreciated by the man of science, and the philanthropist, though it may not be so loudly applauded by the vulgar, when exerted to arrest a fatal disease in its first stages, and to nip the poison in the bud, than, when he endeavours to bring his patient out of that state where there is little hope, into which his carelessness had previously plunged him.

In the classification of the disease which I have adopted, I have endeavoured to follow as nearly as possible that of Dr. Young, and although it be confessedly but a feeble attempt to tread in the steps of that eminent individual, and to follow,—at an immeasurable distance it may be—in his wake—yet, as I do not affect originality—as I do not claim for my view of the subject a correctness above all others—as I do not strive after novelty for its own sake—nor arrogate to myself infallibility; in a word, as I merely seek to be useful, I may perhaps be permitted to say, that having paid the most marked attention to the indications of the disease, and in particular to the appearances of the evacuations in all its stages, I trust the practitioner who has never seen the disease, will be enabled to form a more correct idea of it from the classification I have adopted than by most others,—at some future

period, when my opinions are more matured, time and circumstance permitting, I may endeavour to handle the subject more scientifically.

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### SUBDIVISIONS of CHOLERA, with Cases illustrative of each.

The Diarrhæas which I have observed as most common in this disease are four.

- 1st. Bilious purging,
- 2d. Gruelly purging,
- 3d. Watery purging,
- 4th. Malignant purging.

These four species though in most cases separate and distinct from each other, may nevertheless, and very frequently do run inperceptibly, one into the other in the same manner as a fever may show either a congestive or a typhoid type, but which cannot be clearly deduced from the symptoms present at its commencement, although in cholera as well as in fever we may form a pretty correct notion as to what organ will be most affected, by taking into consideration the peculiar habits and constitution of the patient; some will have apoplectic stupor and stertorous breathing, previous to their death, while others, and by far the greater number will remain collected almost to the last moment, and sink gradually and quietly under it, so much so that (in children especially) it will often-



times be extremely difficult to ascertain whether or not life be still present in the body.

Every medical man knows what a bilious purging, as also those of the gruelly and watery description are, and no surgeon with whom I have conversed on the subject, has ever seen a case where this most essential distinction in the symptoms was absent, at least in the epidemy as it prevails here, and the importance of paying strict attention to these distinctions is greater than at first sight it might appear to be, since by observing them carefully, the practitioner will not be led to administer too potent remedies in one case, and less efficient ones in others, where the urgency is greater. When a person has been exposed to the contagion of fever, and has afterwards a quick pulse, rigors, flushed face, and other febrile symptoms, then an accession of fever may be looked for, and the case must be attentively watched ; but in the disease now under consideration the fever is generally one of depression, and so insidious, that many skilful practitioners cannot determine from the external symptoms, until they assume a more marked character—whether it is a case of cholera or not ; but if the alvine discharges be examined, then he can form in general a correct opinion ; and as it is a disease so rapidly approaching its termination, it is obviously of the first importance that the physician should take that symptom with which the disease almost invariably commences—forming, as it does, so admirable a criterion—from which to judge of its type and its danger.

Having premised this much in a general way, I shall proceed to a more detailed description of each of the four species of the disease.

## 1—DIARRHÆA BILIOSA, OR BILIOUS PURGING.

*Definition.*—The alvine evacuations feculent, or crude, loose and too frequent; with little or seldom any griping or tenesmus, and generally of a bright yellow colour.

*Causes.*—According to the editor of Dr. Good's Study of Medicine, the essential part of this disease consists in a preternatural augmentation of the peristaltic motion, and of the intestinal secretions, together with a peculiar irritability of the intestines and their secerning vessels; its remote cause *may* be a peculiar epidemical constitution of the atmosphere, which contagion may rouse, and call into action: Its predisposing causes are scanty nutrition—intemperance—filthiness and bad ventilation—fatigue—cold and obstructed perspiration—and the exciting contagion.

*Treatment.*—This diarrhæa is of such frequent occurrence in this country, that cases of it must have come under the notice of almost every practitioner, and on that very account it is apt to be disregarded, and while our shores remained unvisited by the malignant cholera, perhaps much mischief might not have arisen from such inattention; but during the prevalence of that fearful malady, it is a dangerous error against which medical men cannot be too much on their guard, since the diarrhæa biliosa is amongst the most insidious of the premonitory symptoms of malignant cholera, and is too frequently merely the precursor of one of the more important kinds, (*viz.*) serosa or maligna, on



which account every means should be used to check it as effectually and speedily as possible, and in particular, if there should be any change in the appearances of the evacuations, if they should be found approaching to that of any of the other species of diarrhæa, we should adopt the most active measures to restore the natural secretions ; this may be best effected by calomel in combination with a purgative—or opium may be used with great advantage, or laudanum enemata ; but the first mentioned medicine is that on which most reliance can be placed, as it may carry off any offensive matter lodging in the intestines ; an effervescing draught may be given at the same time, if there is any tendency to nausea, but independently of this it should be administered after the cathartic ; the following pill will be found very useful.

R̄ Calomelanos	- - - - -	gr. III.
Ext. Colocynth. c.	- - -	gr. V.
Ex. Hyosciam.	- - - -	gr. II.

and after it has begun to operate a Seidlitz powder, to which in lieu of the Rochelle salt 3j. of carb. sodæ to give it an excess of alkali may be added ; if a gentle aperient be required, Dr. Gregory's stomach powder will prove beneficial ; after these measures have been adopted, in order to restore the healthy secretions of the intestines, one tea-spoonful of Dr. Gregory's mixture taken daily in the forenoon will be quite sufficient. If the pulse be much slower than natural before the exhibition of the purgative, it will generally rise after it has operated freely.

Mr. Williamson, the superintendant of the cholera

hospital at Prestonpans, a gentleman for whose talents I have the highest respect, recommends an opium suppository. I am not fond of using too much opium as it is apt to mask the disease, for the secretions of the alimentary canal may be stopped by the sedative effect of the opium, and if there should be any tendency to congestion in the viscera, the disease may pass quickly on to the stage of diarrhæa maligna, and bring the patient into the state of complete collapse.

In recovering from this form of the disease, the patient should have sago, arrow root, or any other light food for two or three days, as it is sometimes apt to return if due care be not taken ; stimulants may also be employed, such as brandy or spirits in moderate quantities, but these must be carefully adapted to the constitution and previous habits of the patient.

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## ILLUSTRATIVE CASES

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### *Case I.*

Mrs. Ch. Smith, aged 23, a married woman ; was called in to see this patient, on the evening of the 25th of January ; has been much exposed to the contagion of cholera, a child having died of it in her own house ; has frequent calls to stool ; evacuations loose, feculent and bilious, which are voided without any pain or straining ; has also some nausea and pain at stomach, with anorexia and some degree of thirst ; pulse 60, full and soft, countenance somewhat anxious, had an enema



composed of 100 drops of laudanum, and ℥j. of spirits, with ℥iij. of starch thrown up the rectum by Reid's apparatus, which was retained till next day.

26th. Had slept well after enema, and has had no more loose dejections, and no nausea, other symptoms abated, was ordered a dose of castor oil which operated freely, stools pretty natural in colour and consistence, pulse 70.

27th. Continues to improve, but still complains of slight nausea, was ordered some effervescing draughts, and in the evening a draught of 30 drops solut. mur. morph. in an ounce of water.

28th. No other complaint but nausea, otherwise well ; the diarrhæa had abated, appetite sufficiently improved to relish a steak for dinner ; after this day she continued to improve and completely recovered.

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### *Case II.*

Jean Livingstone, aged 17, was called in to this patient early in the morning of the 16th of February. She has been much exposed to the contagion of cholera, and says she has had a bilious purging for three days, found her at this time labouring under ineffectual retching, much headache, with rigors, and a severe pain at epigastrium on firm pressure, a trickling sensation of bowels, pulse 64, full. Fiat venæsectio ad ℥xx, gave a jalap bolus composed of 6 grs. of calomel and ℥j. of jalap ; ordered also a domestic enema, which

brought away no feculent matter, another was administered and this also failed ; about four hours afterwards a recurrence of the head symptoms again took place, and vomiting supervened, an enema composed of ʒj. of ext. coloc. c. was diffused in lbj. of warm water, from which she had a copious feculent dejection ; the following pill was then ordered to be taken every two hours.

R Ext. Coloc. c.	-	-	-	-	-	gr. III.
Calomelanos	-	-	-	-	-	gr. II.
Opium	-	-	-	-	-	gr. $\frac{1}{2}$ .

of these six were taken ; a blister to the nape of the neck was also ordered.

17th. Blister has risen well, no head-ache, and bowels have been twice opened, feels quite easy, but has some nausea, to allay which, effervescing draughts were ordered, pills to be discontinued.

18th. Pills have been given contrary to orders, and she is much salivated and slightly delirious, ordered to be kept very warm, and two colocynth pills to be given immediately, and at night a draught containing 100 drops of solut. mur. morph, and one ounce of aq. menth. pip.

19th. Has slept pretty well after the draught, but her mouth is very sore, utatur borat. sodæ in solutione pro Gargarismate. solut. mur. morph, to be repeated in the evening, still slightly delirious.

20th. Again slept well after draught, and no other complaint but soreness of mouth, utatur gargarismate de borate sodæ.

21st. Continues to improve ; and afterwards completely recovered.



*Remarks.*—I left strict injunctions with these patients, that in case the bilious stools became gruelly, or watery, during my absence in attending other cases, I should be immediately apprized of it. I do not conceive it necessary to enter into any more cases under this head, but will merely take occasion to warn the practitioner, that however he may be disposed to trust to more simple remedies at other times, during the prevalence of malignant cholera, venesection and active calomel purgatives should be immediately resorted to, if any indication of change in the evacuations take place, especially if there is much trickling sensation or rumbling noise experienced in the abdomen, and the patient has much debility, that is to say *morbid* debility, for there is doubtless some serious mischief going on internally, and this diarrhæa quickly passes into that of the serous or malignant type; copious dejections come on, and the patient speedily succumbs in a state of complete collapse; in both the cases recorded above, and particularly in that of the girl Livingstone, had I satisfied myself with giving a simple remedy, in all probability the vomiting and purging would in a short time have come on in a more severe form, and the disease become intractable through my neglect, and have carried her off. The evacuations passed previously to my seeing her, were according to this patient's own account of a natural colour, but quite watery, and had she resided in a district unexposed to the contagious influence of cholera, I might have trusted to more simple means, but having previously seen many cases, in which, the dejections having been removed before I had an opportunity of examining them, I was deprived of the only data by

which to form a correct diagnosis of the disease, the patient going about his or her usual occupations in *apparent* health at the time, and have accordingly contented myself with ordering a simple remedy; I have been shortly after again sent for, the purging having come on in a more severe form, to which, vomiting had supervened, and in spite of all my efforts carried off the patient.

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## 2.—DIARRHÆA PULMENTARIS.—GRUELLY PURGING.

*Definition.*—The dejections by stool similar to gruel, or any other farinaceous substance mixed with water, as potatoe flour mixed with water; a farinaceous looking sediment, being observed on pouring off the water; it varies in its colour from being quite white, to that of dirty water or whey. The evacuations too frequent, but passed without tormina or tenesmus; great prostration of strength, with anorexia, and sometimes nausea and thirst.

*Causes.*—Any of the causes which produce bilious diarrhæa, may also predispose to diarrhæa pulmentaris, but it is most frequent in persons of great natural delicacy of constitution, it seems also to be more decidedly contagious than either of the other diarrhæa's, since medical practitioners and attendants on cholera patients, are not unfrequently attacked by it, and if it be neglected, they may fall victims to cholera maligna, of which examples could be given.



*Treatment.*—This diarrhæa is commonly only the precursor of the diarrhæa maligna, to which, if neglected, it generally speedily passes, though it may sometimes exist for eight days, the patient all the while feeling so little inconvenience, as not to think of applying for medical advice, till one of the more dangerous species set in. While the evacuations confine themselves to the gruelly form, and are unaccompanied by vomiting and spasms, the disease may be looked on in a favourable light, and as far as I have observed, if treated judiciously, will soon give way to medical treatment. The remedies I have found most efficacious, are the following: Where there is no vomiting, a pill containing one grain of opium, every six hours, followed by any mild aperient, as aloetics, or Dr Gregory's mixture, will be quite sufficient. I have always preferred giving calomel in combination with a purgative, as it acts on the biliary secretion as well as on the others; if vomiting supervenes, then venesection may be necessary, and after this, a bolus, composed of calomel, gr. vj. and jalap ʒj. and if nausea be present, effervescing draughts. Next day, if the digestive organs are still disordered, as may be ascertained by the loaded tongue and want of appetite, I would recommend small doses of calomel, ext. coloc. c. and opium, in order to produce a natural discharge from the bowels, and by that means prevent any tendency to congestion in the viscera or secreting organs. An opium suppository has been used, but as I seldom resorted to it, except in cases of irritation in the bowels, I cannot say much as to its merits or its efficacy. Hypercatharsis must be avoided, but gentle purging is certainly the best method of putting the bowels in order. If the vomit-

ing should be urgent, a sinapism may be applied to the stomach, and hot sand in bags to the feet and the calves of the legs, and should there be any tendency to faintness, stimulants will be found beneficial, for which purpose brandy and other spirits are useful, and may be administered with the happiest effect, of course, the proper quantities must be entirely left to the judgment and discretion of the practitioner. If the cramps are severe, ligatures may be applied above the parts affected, they answer best, if applied, when the cramps are just coming on, as they sometimes fail when the ventres of the muscles are already spasmodically affected ; stimulating frictions may also be used with advantage.

I have seldom seen this form of the disease fatal without changing to the next species, and so long as it maintains its own peculiar character, a good prognosis may be hazarded. If there has been much spasm, this diarrhœa is often followed by reaction and a slight consecutive fever, the treatment of which differs in no respect from that of typhoid fever, but, of course, it is much milder than that of which I shall afterwards have occasion to speak.

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## ILLUSTRATIVE CASES.

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### *Case I.*

—— Robertson, shoemaker, a widower, is naturally of a delicate constitution. Has been attending his



brother who died of cholera at Tranent ; was called in to this patient on the 22d of February, had been seized the day previous with loose evacuations resembling gruel, which were frequently passed ; he had anorexia and pain at stomach ; his face was somewhat paler than natural ; no vomiting, but some nausea at times ; pulse 64, some thirst, and complained of occasional faintness at heart ; was ordered one grain of opium by the mouth, and two aloetic pills in the evening.

23d. Pills operated, and stools of natural colour and consistence ; was ordered to take nothing but gruel and toast and water to quench his thirst.

24th. Continues to improve, stools of natural colour.

25th. Appetite had returned, and was able to follow his usual occupations.

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### *Case II.*

Robert Taylor, a stout healthy young man, lives in the infected district. Was called in to see this patient on the evening of the 26th of January ; had been seized that day while walking on the sands, with nausea and vertigo, followed by vomiting. Had, when I saw him, frequent evacuations of stools resembling potatoe-flour in water of a wheyish colour. Tongue moist and coated with a white fur ; complained of thirst, with uneasiness and oppression at the præcordia ; had some tendency to fainting when

in the erect posture ; pulse 60, full and soft. Fiat venæsectio ad  $\frac{2}{3}$  xii. by which some tendency to syncope was produced, and after this a copious perspiration broke out over his whole body. He had a jalap and calomel bolus ; if any tendency to nausea supervened, to have effervescing draughts ; ordered nothing but gruel for diet.

27th. Medicine operated freely, and stools were pretty natural ; to have panado for dinner.

28th. Felt so well that he went to his work as usual, without permission.

29th. Having carelessly exposed himself to cold, the diarrhœa had returned ; was ordered small doses of colocynth and calomel pills, taken at intervals.

30th. He felt quite well ; appetite pretty good, and completely recovered.

*Remark.*—The existence of the headach and nausea induced me to bleed this man, which probably prevented the diarrhœa from speedily assuming a more malignant character.

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### 3.—DIARRHÆA SEROSA.—WATERY OR SEROUS PURGING.

*Definition.*—The dejections, similar to whey, rice-water, beef-tea, &c. passed without any pain or tenesmus, as if from a squirt, and in small quantities at a



time. Rigors, great and general prostration of strength, burning sensation or pain at epigastrium and right hypochondrium; thirst, uneasiness, and agitation. Jactitation, with great despondency and spasms, ineffectual retchings or vomitings are generally, though not invariably, present; when they are, great sinking of the pulse is observed; flocculi, floating in the dejections, must be considered a bad omen; a soap and water like scum should not be regarded as so unfavourable.

*Causes.*—This diarrhœa is highly dangerous; and as it is generally preceded, for an indefinite period, sometimes for six or eight days, by one of the before mentioned diarrhœas, its chief cause, besides the prevalence of the contagion, may be regarded as the neglect of the bilious or gruelly form.

*Treatment.*—This species of the disease, when attended by vomiting, may be called malignant cholera, and as the slightest error in its management will inevitably prove fatal, the greatest care will be necessary in the selection and exhibition of remedies. To assist us in doing so, the safest criterion will be found (as I have before observed) in the appearance of the evacuations, and in the general appearance of the patient himself; the pulse is a bad index, and cannot be depended on. When vomiting supervenes, the pulse generally sinks, though cases have come under my own observation where, although vomiting was present, the pulse was very full, and, indeed, nearly as good as in health, and the practitioner deceived by it, has considered himself justified in resorting to venesection, after which, the poor patient has immediately

sunk, and rapidly fallen a victim to the disease ; and, on the other hand, I have seen a patient with a good full pulse sink suddenly without any vomiting. These anomalies are of difficult explanation ; practically considered, the most rational theoretical solution of them which presents itself to my mind is the following :— Vomiting is an effort which nature produces in order to throw off the engorgement of the vessels internally, and to relieve herself from the morbid matter which oppresses her ; sometimes there is sufficient vital energy remaining to effect this, the same not having been yet quite overwhelmed ; by resorting to venesection we diminish this vital energy, and render nature unable to perform the task which she has thus imposed on herself. The vomiting may certainly be staid by blood-letting, but, generally speaking, this is not in consequence of nature having been thereby freed from the load which she is endeavouring to throw off, but it is rather the result of the diminished vital energy which venesection has induced ; vomiting therefore, instead of being stopped, should rather be regarded as a favourable symptom (as far as any symptom can be regarded favourable in such a case), as it shows that nature is not yet entirely exhausted ; and while sufficient strength remains, we may be led to hope she may thus rid herself of the disease. It may indeed be here objected, that by abstaining from bleeding we are allowing the powers of life to be exhausted by the vomiting ; this objection has, it must be confessed, considerable weight, and at the very commencement of this mode of action, when from the circumstance of its recent adoption, nature may not so pertinaciously insist on its continuance, perhaps blood-letting may



not be altogether improper ; but after she has persevered in this method of relieving herself for some time, we must not outrage her plans and place ourselves in opposition to her, by demanding from her the adoption of our method to the surrender of her own, as it can only have the effect of rendering her more inveterately attached to it. The skilful physician will seek rather to assist than to oppose her. To drop metaphor—the great error in the treatment of this disease seems to be the not adapting our remedies to its particular stages, not that it is altogether irremediable. I have already observed, that the pulse is a bad index by which to regulate our treatment in this disease until reaction has recommenced, it may then be regarded as a good criterion, and it is that indeed by which we can best ascertain the commencement of that stage, and our after mode of practice. If the evacuations resemble soap and water with no flocculi in them, if the patient's strength be tolerably good, and no tendency to syncope has manifested itself, blood-letting should then be resorted to ; but this must not be pushed farther than merely to make an impression on the system, a point which can be easily perceived by practitioners accustomed to the use of the lancet in other diseases ; by not observing this limit, which may be termed the *juste milieu*, the point at which safety ends and danger begins, the same unfortunate result may occur here as in concussion, in which many surgeons are in the habit of having recourse to the lancet immediately upon being called to a patient, and what I fear is too often the case, hurrying the disease to a fatal termination, a circumstance which is too frequently ascertained by the post mortem

examination. There may be some mischief at work in an internal organ, such as the brain or liver, to counteract which nature has either already set up a process, or is about to do so; but if the stimulus which she requires has been abstracted, and her vital energy diminished, she will inevitably sink under a load which has been brought upon her by the ignorance of man and the misapplication of his art. This is not so palpably apparent in cholera maligna as in concussion, but we have every reason to believe that such may be the result, for although no fissure may exist in the liver, still no secretion takes place, which is doubtless caused by the vital energy being so far diminished, that nature has not power to enforce her accustomed secretory action, in consequence of her having been deprived of the accustomed stimulus by which she is excited to carry on that function. The extent to which blood-letting may be carried in the majority of cases is about 16 or 18 ounces at one time; but if any bad symptoms present themselves, such as headache or oppression at præcordia, denoting generally a tendency to congestion in those organs, the bleeding may be repeated, but the quantity abstracted must be regulated entirely by the judgment and discretion of the practitioner; after this a bolus, composed of ℥j. of pulv. jalap. and calomel gr. vj. It must be administered in this form, such being the tendency to nausea in this disease, that it may be excited by any nauseous drug; and as the vomiting is by all means to be repressed in this stage of the disease, it is also necessary to prescribe it in this form to insure retention. If, notwithstanding, nausea should supervene, the bolus may be repeated next day; the



patient must be likewise strictly kept on the antiphlogistic regimen, warm bottles should be applied to his feet, and bags of hot sand to the calves of his legs, but the degree of heat should be regulated as much as possible by the feelings of the patient; after these means have been resorted to we must not relax our attentions, but the patient must be carefully watched for two or three days, as relapses are not of unfrequent occurrence in cases apparently favourable; the most effectual means of preventing which I have found to be, the keeping up a gentle action upon all the secretory organs by means of the following pill, taken every six hours.

R $\mathcal{C}$ Calomelanos	-	-	-	-	-	gr. II.
Ext. Coloc. c.	-	-	-	-	-	gr. III.
Opii	-	-	-	-	-	gr. $\frac{1}{4}$

these should be continued for a day or two, because if these secretions are allowed to become torpid, in consequence of our non-intervention, they are apt to flag, and in a short time, the disease may appear again in a more malignant form,\* rendered altogether unmanageable by our previous treatment and subsequent neglect; several examples of this nature have come under my own observation, but I cannot but regard it as a fact equally remarkable and gratifying, that it has happened in no case placed under my own care; I mention this not for the purpose of indulging any vain or self-gratulatory feeling, but as an unequivocal testimony

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\* The tongue is in general found loaded, and the appetite very indifferent in cases where a relapse is threatened.

to the correctness of the views I entertain, respecting the necessity of paying the minutest attention to every symptom in every stage of the disease. Blood-letting generally speaking, cannot be ventured upon to any extent in relapses, certainly not far enough to be serviceable, and I have even observed that relapses always assumed the most malignant type of the disease, and proved almost invariably rapidly fatal. With regard to diet, gruel, sago, or any light food will be found quite admissible ; and sometimes beef tea, toast-water for drink, or lemonade and an effervescing draught occasionally, as it keeps up a gentle solubility of the bowels. If the practitioner is called in when vomiting is present, but not very severe, and if it has been ushered in but a short time previous to his arrival, bloodletting, as has before been remarked, may be resorted to, and the same treatment pursued as has been recommended when vomiting was not present ; but if, upon examining the evacuation, it is found to be very profuse, and particularly if it has any appearance of being limpid, resembling clear whey with flocculi floating in it, then the lancet must not be used, as by doing so, we shall only aggravate the disease, and hurry it on to a fatal termination ; and, if upon being called to a case, the physician should find that the vomiting and whey-like purging has continued for one, two, or three hours, then calomel, opium, and ext. coloc. c. is what we must chiefly depend on ; ℞j. of calomel, 5 grains of ext. coloc. c. and one grain of opium, may be repeated every hour or two ; blood-letting must on no account be resorted to, the object now being to support the strength by the exhibition of stimulants external and internal, and to stimulate



the liver and other organs internally to a natural secretion, before the patient falls into a state of complete collapse and pulselessness. I have seen cases where the vomiting of green bilious matter, indicated a resolution of the disease, but never after the patient had fallen into the stage of complete collapse. Cases have come under my own observation, where this evacuation has taken place with natural stools, in that stage of the malady ; but it was of no avail, as, notwithstanding, the patient inevitably sunk. I have, however, been informed of cases where the patient was pulseless, and recovered after this vomiting. It will be idle and useless for me to mention all the stimulants that may be used, but all that I have found necessary, were blisters, sinapisms, spirits, equal parts of the strongest aqua ammoniæ, oleum terebinthinæ, and olive oil for external friction, and I generally ordered the spine and all the body to be well rubbed with this. I would not wish by any means to limit the practitioner to any particular internal stimulant, as every kind should be used from which he may think any advantage can be derived, provided the patient's stomach will bear it. If the pulse at wrist can be kept up pretty good during the vomiting and purging in the serous diarrhœa, for twenty-four hours, the case may be considered favourable, as the treatment after this resembles that pursued in typhoid fever. The following cases will serve to illustrate the various grades of this disease from a complete collapse, collapse, re-action, and slighter re-action.

## ILLUSTRATIVE CASES.

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*Case I.*

Mrs. Smith, age 39, married, and has a family of five children, occupying but one room, ill ventilated, and extremely dirty, (hens roosting in the same room) has only two beds for herself, husband and family, her house is situated in the infected district ; her husband was seized with an attack of cholera spasmodica three days back, and she has been engaged in attending him ever since, she had also been in the habit of visiting a person who fell a victim to the disease previous to her husband's attack ; has been exposed to much fatigue during the last three days, and has not slept above two hours during the whole of that time, has been affected with giddiness, uneasiness at epigastrium with a sense of weight, accompanied with a rumbling noise of the intestines, and a slight diarrhœa for some days back, but suffering but little inconvenience from it, she has paid scarcely any attention to it, but her stools have now (24th January) become more frequent, and at six o'clock on the evening of the same day during the time I was attending her husband, she fell down in a state of great weakness, and much general prostration of strength ; has at present ineffectual retchings at short intervals, followed sometimes by vomitings of a mucous and somewhat viscid matter, pulse 88 full and soft. Eight o'clock—she had taken already one grain of opium : was now bled by a gentleman who was present, but only six ounces could be



obtained, and afterwards about an ounce of sea-salt dissolved in half a pint of water was then given as an emetic. Ten o'clock—emetic had operated freely; had some increase of diarrhœa of a muco-flocculent evacuation resembling whey, but no appearance of any feculent matter,—appeared greatly agitated, countenance slightly collapsed, with a vacant stare, or rather an expression of terror strongly depicted on it, much anxiety shown as to the eventual issue of her disease, eyeballs gradually sinking into their orbits, eyes are dull and heavy, but pupils are quite natural, face sharp and countenance hippocratic—bearing a strong resemblance to its appearance in the last stage of consumption—although she was naturally rather a stout woman with a full round face.

Twelve o'clock.—Vomiting and purging have become more severe, accompanied by some vertigo and tendency to syncope; has some tenderness of epigastrium with a sense of stricture across the chest, but expansion is equal; mucous wheeze on left side of the thorax, but no pain whatever felt on full inspiration; complains of much general languor and lassitude; abdominal muscles are in a state of paralysis and respiration is diaphragmatic; no pain in the region of the liver, although pressure is made under the false ribs, nor any circumscribed fulness there; has much thirst accompanied with a burning sensation between the scrobiculus cordis and umbilicus; lips are dry and parched (but not livid) and she calls frequently for cold drinks; one stool passed every ten minutes; has slight crampish pain of toes, but no distinct spasmodic action of muscles, surface of moderate warmth, and has occasional general sweating from which she says she

finds great relief; nausea and vomiting much diminished—applied a sinapism to the epigastrium, ordered  $\frac{1}{2}$  an ounce of spirit. comm. every hour with warm water and sugar. January 25th, two o'clock A. M. Has chilliness of surface unless hot applications are kept constantly applied; tongue furred and moist, of an icy coldness, but well protruded, the internal parts of the mouth feel also cold; has some tinnitus aurium, and deafness. The heart's impulse is somewhat weaker than natural, but its action can be distinctly felt; breath feels cold and the purging and vomiting are simultaneous, the latter is discharged as if from a squirt or syringe; spasms then came on in the limbs, first beginning with a sensation of pain, then gradually extending to calves and thighs which were very violently contracted, they were also severely felt in the arms and fingers; ligatures applied above the part affected with cramp, were found however to give effectual relief; after this attack of spasm the pulse was scarcely perceptible at wrist, and the surface felt cold, palms of the hand were shrivelled, and a general colliquative and clammy sweat broke out over the whole body, muscular motion was not in the least degree diminished; countenance ghastly, and eyes were sunk in the sockets, surface of a leaden hue, which is also perceived on the lips and under the nails; has had half a grain of opium every hour, and 60 drops of laudanum in divided doses.

Three o'clock.—Pulse absent at wrist, but has had no return of spasm: No uneasiness felt from the sinapism, and the skin was not affected by it; mind is entire and quite collected, and she entreated to be told if her end was approaching.



Four o'clock.—Another attack of spasm, which was again subdued by the use of the ligatures ; her body at this time emitted a disagreeable earthy odour—the peculiar smell of which can scarcely ever be forgotten by any one who has been near cholera patients in a state of complete collapse ; from this period she continued in a condition of which it is difficult to convey an idea to those who have not personally witnessed it ; it might perhaps be best understood by imagining a dead body to be carrying on the respiratory functions in a soft and slow manner, with eyelids half open ; with this difference, that the mind is here present, in active operation and fully alive to every thing that is taking place ; even after the pulsation of the heart had ceased to be felt, she expressed herself quite easy, and wished to sit up in a chair, but of course was not permitted to do so ; she remained in this awful condition for thirty-two hours, as if the powers of life were quite exhausted, and its last ebb slowly departing ; when two hours before her death she had slight headache followed by blindness and stupor, which closed the mournful scene.\*

*Remarks.*—The use of the kitchen salt in this case was not adopted at my suggestion, for I had not at that time heard of such a remedy in cholera ; it was administered by a gentleman who had seen and treated some cases at Tranent, and when the hospital at Prestonpans was fitted up, he was intended to be placed in charge of it under a superintendant, of course I gave in to his *superior judgment and skill* ; the opium I myself

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\* Having received a wound in conducting a dissection before I left town, I was prevented from a post mortem examination in this case.

wished to give a fair trial to, and from the conclusions drawn from this case must consider it to have been quite inefficient; as this was the first case of cholera I had seen, I was not so well qualified to judge of the indications of its various stages, and of the necessity of adapting the remedies accordingly as I afterwards became; and I trust that were I now called on in such a case I should treat it more scientifically; but I was deceived by the loud encomiums passed upon opium and mustard emetics; I found afterwards however, that cholera is just as tractable by *rational* medical treatment as any other disease, as the following cases will exemplify.

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### Case II.

Henry Adams, age 46, a collier, was called into this patient at 12 o'clock at night, on the 24th of January, during the time I was attending his sister, Mrs Smith, whose case has been detailed above; has been much exposed to the contagion of cholera, a child having died of it in his house. Has uneasiness and pain at epigastrium, and complains of anorexia and thirst, with some degree of nausea, and an inclination to vomit; has had a slight diarrhæa for the last two days. Has now frequent evacuations of a fluid resembling soap and water; pulse 64, full and soft. Fiat venæsectio ad ℥xvj. ordered pulv. jalap. ʒj. calomel gr. vj. and a domestic enema to be given immediately; to have effervescing draughts when required, to quench thirst.

25th. Had copious natural stools from medicine, but complains of thirst and anorexia, tongue furred and



moist, ordered the following pill to be given every two hours,

R Calomelanos - - - - gr. II.  
G. Opii. - - - - gr.  $\frac{1}{4}$

and effervescing draughts to allay nausea ; pulse natural.

26th. Anorexia still continues, with some uneasiness at epigastrium ; evacuations nearly natural ; pulse good.

27th. Mouth somewhat affected by the calomel, but appetite is good, and relishes his food ; was ordered a dose of castor oil ; and ten drops of nitric acid, in six ounces of water, sweetened with sugar, for drink, to be taken frequently during the day. Omit. pil.

28th. Appetite good, no complaint, was ordered a steak for dinner.

*Remarks.*—I was the first to introduce venesection, followed by a cathartic combined with calomel, for the cure of cholera in Prestonpans, and finding so much good from the use of purgatives, I afterwards added ext. coloc. c. to the calomel and opium pills :\* this practice was afterwards adopted by another practitioner, who had opportunities of observing my method of treatment, who pursued it with success, as far as I saw.

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\* My reasons for preferring this mode, will be found under the head of Cursory Remarks, to which the reader is requested to refer.

## Case III.

John Thomson, age 40, a fisherman. First visited this patient at six o'clock on the evening of the 25th of January; has had slight diarrhœa for a day or two back; has frequent watery dejections, very similar to beef-tea; has much thirst, pain, and anorexia; complains of nausea, and vomits at times; has great general prostration of strength, tongue furred and moist; pulse 66, pretty full; fiat venæsectio ad  $\bar{3}$ xii. et sumat bolum jalapæ cum calomelane, et

Habt. Pulveres Carb. Sodæ  $\bar{3}$ j. } to be taken when  
 Tart. Acid  $\bar{3}$ js. } nausea comes on.

Dissolved in half an English pint of water.

R Pulv. G. Opii	-	-	gr. II.
Ext. Coloc. C.	-	-	ḡj.
Calomelanos	-	-	gr. xvj.

Ft. massa et div. in pil. viii. sumat j secunda q. q. h.

26th. Bowels have been freely opened, but tongue is furred, and still complains of anorexia. Pills to be omitted.

R Calomelanos	-	-	gr. ii.
Opii	-	-	gr. $\frac{1}{4}$ .

Fiat pil. sec. q. q. h. sumenda.



27th. Some return of appetite, and feels much better ; no recurrence of diarrhœa, and stools are of natural colour. Omittantur omnia. This man completely recovered.

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#### *Case IV.*

— Copland, a stout healthy man of about 50 years of age, and sober habits : Was called in to this patient, in the forenoon of the 26th of January, at which time he was seized with an increase of a slight diarrhœa, was seen also at that time by Mr Williamson. Has been exposed to the contagion of cholera, a person having been attacked with it in the same tenement ; complained of anorexia and pain at stomach, with thirst and general prostration of strength ; pulse 60, full. In the evening he had some nausea, with an inclination to vomit ; his dejections were watery, similar to whey, but somewhat darker, it had a scum on it, but no farinaceous looking sediment at the bottom of the vessel, countenance anxious and thirst increased. Fiat venæsectio ad ℥xvj. After the blood-letting he had some tendency to syncope, was ordered some spirits and water, after which a copious sweat broke out, and nausea abated ; jalap ʒj. et calomel. gr. vj. in forma boli, were then given, spirits and warm water to be given occasionally, when nausea supervened, effervescing draughts.

27th. Had slept well, and bowels were freely moved, stools were feculent ; jalap gr. x. and calomel gr. iii. were ordered.

28th. His appetite was now pretty good, and no return of diarrhœa; stools reported natural.

*Remark.*—This man's wife and son were both attacked after he had recovered, of whom the latter fell a victim to the disease.

### Case V.

Birrel Sharp, age 46, applied to me on the morning of the 31st January, he was then labouring under a serous diarrhœa, which had continued for two or three days, but was now more severe; complains of nausea and uneasiness at epigastrium, with thirst and much general prostration of strength, pulse 66, fiat venæsectio ad  $\text{z}xvj$ . nausea still present, after the blood-letting a copious perspiration broke out over the whole body; had a jalap. bol. and pills composed of ext. coloc. c. calomel and opium, and effervescing draughts.

*Remarks.*—In the house where this man lived there were four persons attacked by cholera, after he had recovered, two of which proved fatal.

### Case VI.

Archibald Hunter, a stout healthy fisherman; was called in to this patient on the morning of the 8th of February, at which time he had been attacked by serous diarrhœa; the dejections were similar to common isinglass dissolved in water, but no flocculi were observed in them; the evacuations were frequent, and



and passed as if from a syringe, or, according to his own expression, “ran from him;” had anorexia, uneasiness at epigastrium, and a sense of weight of intestines, pulse nearly natural: Fiat venæsectio ad ℥xii., habt. pulveres jalap. ʒj. calomel, gr. vj. fiat bolus, and if nausea supervened, effervescing draughts to be taken; calomel, and opium pills were ordered in the evening to be given every three hours; nisi dormiente ægro.

9th.—Had slept well, stools natural, but appetite indifferent, ordered the calomel and opium to be continued.

10th.—No complaint, appetite good, medicine to be omitted.

*Remarks.*—This man’s wife was attacked with similar symptoms, on the evening of the same day on which he was taken ill; but in addition to the other indications, she had a good deal of ineffectual retching, and the burning pain at epigastrium was much more intense than he complained of, thirst was also very urgent in her case; she was treated in a similar way to her husband, and completely recovered in two or three days.

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### Case VII.

John Blair, age 84, attacked on the 4th of February, at two o’clock P. M. with vomiting and purg-

ing of a fluid resembling beef-tea, has burning pain at stomach, with much thirst, great general prostration of strength, complains of anorexia, and uneasiness; countenance anxious, lips slightly livid, tongue furred and moist, pulse 60 small, and rather weak; fiat venæsectio ad  $\text{ʒx}$ . pulv. jalap.  $\text{ʒj}$ . calomel. gr.  $\text{vj}$ . fiat bolus, habt. spirit. comm.  $\text{ʒss}$ . secunda quaque hora cum aqua calida et saccharo; and after three hours, unless feculent stools be voided, a domestic enema. At six o'clock, he had a feculent evacuation, which made the enema unnecessary, was ordered a pill composed of

R. Ext. Coloc. c.	-	-	-	gr. III.
Calomelanos	-	-	-	gr. II.
Opii	-	-	-	gr. ss.

fiat pil. tertia q. q. h. sumend. et habt. carb. sodæ  $\text{ʒj}$ . acid. tart.  $\text{ʒss}$  of each six powders for effervescing draughts, if nausea supervened.

5th.—Purging rather severe at 9 o'clock A. M., had an opium suppository (ordered by Mr Williamson), which entirely suppressed it; at twelve o'clock his pulse was pretty full, and nearly natural, tongue whitish, has had two or three effervescing draughts, omit. medicam. habt. spirit. comm.  $\text{ʒvj}$ . cum sacchari  $\text{ʒj}$ . to be given in small quantities at a time.

6th.—No complaint but weakness; sleeps well; habt. jusc. bov. lbj.

7th.—Continues to improve; and afterwards completely recovered.



*Remark.*—Blood-letting was resorted to in this man's case, because the vomiting had come on but a very short time previous to my seeing him, and it was then not very urgent, his evacuations being such as not to forbid the use of venesection, otherwise his great age would have deterred me from it.

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*Case VIII.*

Alexander Shaw, fisherman, age about 40 ;—was called in to this patient on the forenoon of the 7th of February ; has been attending his sister Mrs. Steele, who is at present labouring under cholera ; has been troubled with diarrhœa since the 4th inst. from which, however, he did not feel much inconvenience ; had, when I saw him, severe vomiting and purging of a fluid resembling rice-water. His eyes were somewhat sunk in their sockets, face and hands livid, tongue furred and moist, and felt cold, as also the internal parts of the mouth ; complained of intense thirst and burning pain between the scrobiculus cordis and umbilicus. Skin and palms of the hand much shrivelled and contracted, pulse 60, small and weak ; was ordered a bolus composed of jalap, ʒj. and calomel, gr. vj. with effervescing draughts if nausea supervened.

Rx. Calomelanos. - - - ʒj.

Ext. Coloc. c. - - - ʒj.

Opii. - - - - - gr. III. Fiant Pil. vj.

Fiat massa et div. in pil vj. st. unam 2nd. q. q. hora.

Habt. tertia q. q. h. spirit. comm.  $\bar{3}$ ss. cum aqua calida et saccharo.

Eight o'clock evening—has had a feculent evacuation, and pulse is of better strength, but blueness of surface still continues; hot sand in bags, and bottles of warm water were applied to his extremities.

8th.—Slight ptyalism has been excited; and he has vomited a good deal of green bilious-looking matter; blueness of surface somewhat abated; but thirst still continues and *cold* drinks have been repeatedly asked for; but ordered always to be given lukewarm; pulse pretty full and more frequent; diarrhœa had abated and stools continue feculent; omit. medica. habt. spirit. comm.  $\bar{3}$  vj. to be given in small quantities with sugar and warm water.

9th. Mouth still slightly affected, and occasional vomiting of a green bilious-looking matter takes place. No return of appetite.

10th. Blueness of surface much diminished; no other complaint; slow motion of the bowels, habt. pil. aloet. duas octava q. q. hora donec solv. alvus; cont. spiritus.

11th. Appetite returning; was ordered beef tea, and recovered rapidly after this day.

*Remark.*—In this case bloodletting would probably have sunk the patient; he required stimulants of every kind to rouse him from the state of depression into which he had fallen. I considered it necessary



however to promote the flow of the alvine secretions by large doses of calomel, with the addition of a small quantity of any cathartic medicine, which I have generally found useful in quickening the action of the mercury ; adding a little opium at the same time to prevent any irritation which might be excited by it. In the house in which this man resided four were attacked by the disease, of whom one fell a victim to it.

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*Case VIII.*

Mrs. Shaw, aged 24, wife of the person whose case has just been related, is of a delicate habit of body ; has had diarrhœa for two or three days back ; was attacked at ten o'clock on the morning of the 8th of February, with violent vomiting and purging of a fluid resembling whey, with flocculent matter floating in the evacuations, which were passed nearly every twenty minutes ; the dejections were not very copious, and were passed in small quantities ; the vomiting I was informed had commenced only about a quarter of an hour before I arrived ; pulse 66, rather small ; fiat venæsectio ad ℥xii. She had some tendency to syncope after the blood was abstracted, with partial sweating : The vomiting and purging however ceased for an hour or two, and during this remission jalap. ʒj. and calomel gr. vj was given in form of a bolus.

Two o'clock. The countenance was becoming hippocratic, and eyes sinking into their orbits, with a blue areola round them ; pulse was small, and vomit-

ing was once excited; an effervescing draught luke-warm was ordered to be given upon any tendency to nausea and vomiting exhibiting itself.

R. Calomelanos	-	-	-	-	3j.
Ext. Coloc. c.	-	-	-	-	ʒj.
Opīi	-	-	-	-	gr. iij.

fiat massa in pil no. vj divid. St. unam, 2nd. q. q. hora. Bibat. decoct. hordei ad libitum. spirit. comm. ʒss 2. q. q. h. cum aqua calida et saccharo. Bags of hot sand were applied to the calves of the legs, and bottles of warm water to the feet.

Six o'clock. Surface of a leaden hue, and extremities cold, pulse feeble, no stool; dislikes the spirits and water, as it increases the burning pain at stomach, but relishes the effervescing draughts from which she finds much relief.

Ten o'clock. Pulse scarcely perceptible at wrist, has blueness of surface, the face being of an indigo hue; extremities feel cold, vomiting has been relieved by the effervescing draughts; has some crampish pain in limbs, but not very severe.

Twelve o'clock. Pulse was not perceptible at wrist, complains of pain in the back, with some oppression at præcordia; R Olei terebinthæ, Aquæ ammoniæ fortis, Olei olivæ a.a. ʒii fiat linimentum. Spine as well as chest to be well rubbed until some tenderness is felt; apply sinapism to epigastrium. Pulse returned and was pretty full, frictions again repeated, pulse continued at wrist, frictions to be repeated whenever the oppression at præcordia is experienced, was ordered the following pill every two hours.



R Calomelanos	-	-	-	-	gr. x.
Extr. Coloc. c.	-	-	-	-	gr. v.
Opium	-	-	-	-	gr. ss.

and effervescing draughts to be taken when any tendency to nausea or vomiting occurred; pulse was very weak, spirits and warm water still disliked on account of the aggravation of the pain at stomach which it produced, but effervescing draughts much relished.

Two o'clock. Pills are retained on stomach, and has less vomiting; bottles of hot water were applied to her feet, and bags of hot sand to the calves of her legs; contin. liniment. et pilulæ omni hora.

February 9th. Has had twelve effervescing draughts, and passed one feculent evacuation; vomits at present a green bilious-looking matter, and a farinaceous-looking sediment was observed at the bottom of the vessel; thirst still urgent, and skin warm; pulse 100, full; has still anorexia, and complains of much general debility; tongue somewhat dry; no complaint of pain, urine passed freely, omit. pilulæ; contin. pulveres effervescentes.

10th. Pulse still very full; tongue dry; complains of nothing but weakness, no return of appetite, no stool; habt. enema, domestic; to have gruel for drink, pulveres effervescentes to be discontinued.

11th. No complaint but nausea; pulse 96, full.

12th. Pulse still full; no complaint; desires some

wine, eight ounces of which were sent her; tongue clean, but dry and florid.

13th.—Relishes the wine; has had some uterine hemorrhage, and discharged a compact-looking body about the size of a turkey's egg: on making a section of which, it exhibited a decolorised fibrous structure internally, with clots of blood adhering to its external surface; the room was ordered to be kept as warm as possible, as she complained of slight pectoral symptoms; no stool; was ordered a dose of castor-oil by Mr Williamson; gruel diet to be continued.

14th.—Pulse of good strength; continues to improve, and from this time she slowly recovered, and was dismissed from the hospital cured, on the 25th of February.

*Remarks.*—Had the pulse been adopted as a criterion in this case, a practitioner would have been inclined to bleed, in order to reduce the force and frequency of the circulation, and prevent any tendency to local determination; but I always found stimulants and gentle purging by far the most judicious method of treating the Consecutive Fever of this disease. I have no doubt that those cases in which practitioners talk of bringing the patient out of a state of complete collapse, must be similar to this, which I would term imperfect collapse; as in the stage of complete collapse, (an example of which will be found in the case of Mrs Smith, recorded in page 48, and to which I beg to refer the reader), I firmly believe the patient is beyond the reach of any remedy.\*

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\* These two last patients were seen by Dr John Thomson of Edinburgh.



## 4.—DIARRHŒA MALIGNA.—MALIGNANT PURGING.

*Definition.*—The dejections watery, resembling whey, or a fluid of a pale straw colour, with flocculi floating in it, generally limpid, discharged suddenly in a full stream, and very copious: the patient experiences a sensation as if his bowels were coming out, accompanied by a sense of weight, followed by a great gush, like that of water poured through a soil-pipe, not passed as if from a squirt as in the serosa *per saltum*; this discharge is almost invariably succeeded by a complete asphyxia; the degree of limpidity in the evacuations, generally denotes the greater danger. Spasms and vomiting are generally, though not invariably, present. Cold sweats, shrivelling of the palms of the hands, coldness and blueness of the surface. Rigors, nausea, headache, and a trickling sensation of the bowels, with diarrhœa, are often present for some days previously to an attack of the malignant purging

*Causes.*—The principal cause of the diarrhœa maligna may be regarded as the neglect of any of the preceding diarrhœas during the prevalence of the contagion, since it rarely occurs, but in cases where the pulmentaris or serosa species have been present for an indefinite period, extending often to eight or ten days; sometimes, however, an attack of the maligna comes on suddenly, without any previous warning, in which case, it may be attributed to the existence of a strong predisposition to the disease on the person coming within the sphere of its contagious influence. Indul-

gence in a fit of intemperance during the existence of any of the milder forms of the disease, will be almost invariably followed by an attack of the malignant diarrhœa; in such cases, it will certainly almost ever prove fatal, although it must be confessed that the intemperate, are not its only victims, since it is consistent with my own experience, that persons of the most regular and sober habits have been carried off by it.

*Treatment.*—Practitioners who have not personally witnessed this diarrhœa, will be astonished at the immense quantity evacuated by stool in this form of the disease. The pulse although somewhat slower than natural, will, nevertheless, be in general tolerably full; and trusting to its indications, the practitioner will probably be inclined to bleed; no error can be more prejudicial; venesection is on no account to be resorted to in this stage, as the congestion in the internal organs has existed long enough to overcome the nervous energy; and nature unable to endure the struggle, and left to her own resources, has been obliged to attempt to shake off the load which she could so ill bear, as suddenly and speedily as possible; relieving herself by an evacuation which sinks the vital powers. The only remedies which can be used with safety are stimulants, both external and internal, such as spirits, nitrous ether, ammonia, and stimulating frictions, composed of turpentine, ammonia, and olive oil, or ol. sinapis, and in fact, any kind of stimulant which the practitioner may think useful. Bags of hot sand should be applied to different parts of the body, and bottles of hot water to the feet. Calomel in large



doses, with ext. coloc. c. and opium, may also be given as affording the fairest chance of success ; purgative enemata should also be administered if the patient should not be pulseless, but if the powers of life be fast declining, stimulating enemata should be substituted in lieu of them. Melancholy and humiliating as the confession may be, we are compelled to admit, however, that all our efforts, generally speaking, will be in vain, the disease having already advanced beyond the reach of medicine, and is withal so speedy in its operation, that remedies have not time to act ; at least I can safely assert, that I have never seen or known a case in which the patient recovered from a state of complete asphyxia.

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### ILLUSTRATIVE CASE.

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Mr A. B——n, a strong stout healthy man, age about 50, is possessed of very keen feelings, has been suffering under severe mental affliction, in consequence of having lost a favourite daughter two days previous, since which period, he has slept none, having been so much overpowered with grief ; is a man of very excellent character, possessing the esteem of all who know him ; his habits are particularly regular, temperate, and sober ; had always buoyed himself up with the idea that he should escape the visitations of the Pestilence, under the impression that it attacked only the dissipated and intemperate. Came into my room about 9 o'clock, on the morning of the 8th

of February, and asked for my advice ; he complained then of a purging, which he said had commenced the day before, and expressed a fear that it might become more violent ; his tongue at this time was furred, and he had ate scarcely any breakfast, complained of anorexia ; with these exceptions, he was to all appearance in perfect health ; he then went home to his own house, where I visited him at 10 o'clock ; I had told him to keep all the evacuations he passed, in order that I might be the better enabled to judge by them of the character of his disease. I examined the dejection which he said he had passed all at once ; it was not more than three or four pounds of a fluid, of a pale straw colour ; complained of having experienced a sense of weight, when he passed it, and a sensation as if his bowels were coming out ; Pulse 64, full, and pretty good. I desired him instantly to go into bed, and keep hot water in bottles at his feet, and round his body. He shewed great depression, and seemed to feel that he had the hand of death upon him, as he began while I was there, to arrange his worldly affairs, and when I remonstrated with him, and warned him that by so doing, he would only aggravate his disorder, he replied, that he thought it was necessary to have every thing settled.

Twelve o'clock. Pulse still full, and pretty good, purging almost stopped.

Two o'clock. He fainted, and fell into a state of complete asphyxia ; he had after this a copious and free perspiration, with slight return of pulse, but it was scarcely perceptible at wrist ; coldness of surface suc-



ceeded, and shrivelling of the palms of the hands similar to those of a person who has been washing clothes; clammy sweats broke out over his whole body; his voice was much altered and somewhat hoarse; had a good deal of jactitation and uneasiness, with great oppression at præcordia; breathing somewhat hurried, complaining of burning pain at epigastrium, great thirst; calling continually for cold drinks; his face was very pale, and his skin all over his body rather paler than natural, but no blueness whatever on any part of the surface was observable; his mind was now quite tranquil, though fully alive to his danger, as his wife and daughter stood weeping before him.

Five o'clock. Continues in a pulseless state, constantly calling for cold drinks, spirits and warm water with a little sugar had been ordered all along, but he generally refused it as it aggravated the pain in the stomach.

Eight o'clock. Has stupor, and is quite insensible, surface and extremities cold, and covered with a clammy sweat, evacuations passed involuntarily in bed, continued in a state of insensibility till betwixt twelve and one o'clock, when he died without any apparent pain or struggle.

*Remarks.*—This patient had neither nausea nor vomiting during the course of his disease, but he sunk from the first into a state of asphyxia from which he never recovered, there can be little doubt that fear contributed in no small degree to hurry on the malady

to a fatal termination, the state of agitation and depression into which he had been thrown by the recent death of his daughter, and the poisonous effect of the plague whose contagion he had imbibed, concurring together, proved too strong for his vital powers, and he sunk under it; that fear was a strong agent in producing the fatal result, may be judged from the circumstance of his having requested his wife frequently to permit him to see himself in a mirror, for the purpose of ascertaining whether his face was assuming the appearance of his daughter's who had died of the cholera two days previously; and the horror he felt at becoming the victim of a disease whose fearful effect he had seen exhibited so recently in one so dear to him proved too much for his shattered nerves; he fainted immediately after seeing himself and never afterwards recovered; the remedies employed (and which for peculiar reasons I have not given in a detailed form) were chiefly stimulants, the case not appearing to warrant the use of any other, but as the event shows, they proved ineffectual to producing re-animation.

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#### APPEARANCES ON DISSECTION.

The post mortem examination of the bodies of cholera patients will never, it is to be feared, do much towards elucidating the many obstacles which stand in the way of our arriving at a just conclusion as to the nature and character of this terrible disease; or to en-



able us to adapt our practice so as to counteract its deadly effects ; in this particular as well as in many others already pointed out, it also strongly resembles fever, in both diseases, and particularly in cholera, many cases having terminated fatally from the mere exhaustion of the patient ; from the effects of an accident to which I have already adverted, I was prevented from performing any dissection myself, but for the satisfaction of my readers I subjoin the result of the labours of others in that respect. In making a section of the abdomen, the blood vessels are almost invariably found engorged with blood, and the stomach is generally inflamed, being of a dusky red colour, such inflammation being commonly greatest at the pyloric orifice ; bilious matter is frequently found in the duodenum, and grey-coloured matter in the stomach, the gall-bladder often shrivelled and containing half an ounce of dark green bile ; these appearances do not however always exist, many cases have occurred in which it was remarked on dissection, that all the cavities were entirely destitute of fluid ; but in every case an efflorescence of the internal surfaces of the stomach and bowels have been particularly observable, and as may be expected, the heart and venous system, will ever be found preternaturally swollen, and gorged with a thick and viscous blood ; disease of the organic structure has also been discovered, but this cannot with any propriety be set down as the effects of the malady, but must be attributed to previous disease ; which although it could not have originated an attack of cholera may certainly have rendered the patient more susceptible of the contagion.

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### CURSORY REMARKS.

Considering the high encomiums which had been passed on Mustard, Salt, and Laudanum, by various constituted bodies as well as individual practitioners, and the specific virtues which they, as well as a host of other nostrums, were said to possess, the reader may perhaps be desirous of knowing what were the reasons which induced me to adopt that mode of treatment which I afterwards found it expedient to pursue.

It had always struck me as being the height of absurdity to assert that any *one* remedy would suit *every* case; but led away by the host of great names who promulgated that doctrine, I reluctantly determined to surrender my own judgment to their more mature experience, until observation had convinced me that the remedies thus confidently recommended by them were worse than useless,—that they were in fact highly pernicious; the very first case in which I saw the use of kitchen salt resorted to, was sufficient to convince me of its injurious tendency, as it produced such a violent hypercatharsis as was more to be dreaded than the disease itself.\* My confidence in these boasted remedies being thus weakened by the signal failure of one of the most vaunted of them, I

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\* I am happy to find that my own opinion on this subject has since been confirmed by that of Mr Williamson.



was naturally led to consider what there was in the nature of cholera to place it beyond the pale of rational medical treatment ; and my observations soon confirmed me in the opinion I had previously formed regarding it. I found that during the 24th and 25th of January, four deaths had occurred from the malignant form of the disease, which had commenced in each case with a slight diarrhœa, to which the patients had paid but little or no attention ; there was no pain felt in any part of the abdomen on pressure, nor any tormina or tenesmus existing : I was, consequently, naturally led to conclude that there could be no inflammation, but that it must partake more of the nature of Congestive Fever than of any other disease, and ought to be treated accordingly. This hypothesis of the similarity between fever and cholera was, as far as I know, entirely of my own conception, and indeed, all the medical men to whom I mentioned it, entirely disagreed with me on this point. Having adopted this view of the subject, my next object was to decide upon some plan of treatment, in accordance with the opinion I entertained of the character of the disease. In India I was well aware that those practitioners were most successful who used the lancet freely, and administered large doses of calomel in cholera spasmodica ; I was however, also aware, that the exhibition of such large doses of calomel in this climate, and more especially at that season of the year, when it prevailed in this country, was, to say the least, extremely hazardous ; but I knew too that the best medicine I could give for promoting a due secretion from the liver, and other secretory organs, was calomel combined with a cathartic, and I recollect that the



celebrated Dr Rush had been very successful in the use of these medicines as a remedy for the Epidemic Fever, which prevailed in Philadelphia in the year 1793 ; and in this country it is well known that the basis of all those medicines called antibilious is calomel and a cathartic ; now, in this disease, there is no bile secreted, if so, why not promote it by the use of those remedies ?—and after their due exhibition, I considered a mild neutral salt, formed of a combination of soda and acid, would be found useful ; an opportunity was soon afforded me of giving this method a trial, in the case of a man named Adams,\* and the result was most gratifying ; but little doubt *now* exists as to the proper treatment of cholera, and the class and description of remedies to be employed ; the whole difficulty seems to consist in ascertaining the proper period and stage of the disease in which those remedies should be employed, and it is on this account alone that I have

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\* I took the whole responsibility of this case on myself, and feel satisfaction in stating that I had no reason to regret it ; while, upon this subject, perhaps, I may be excused for remarking, in passing, on the want of candour of a fellow-practitioner. This gentleman, in his previous practice, relied chiefly upon indiscriminate blood-letting ; not finding its results satisfactory, and having an opportunity of seeing my mode of treatment, he was led to adopt it, and ever after pursued it with the happiest effects. In an Essay, which he has lately written, he has, notwithstanding, to my surprise and astonishment, in the most disingenuous manner, arrogated to himself the merit of introducing the method of treatment which he had thus obtained from me. It may no doubt be urged on his part, that the use of calomel and cathartics was familiar to every one ; true,—but, if I first introduced it in cholera cases, I am certainly entitled to the merit of its discovery as a remedy in that disease. It was not introduced by me as a mere experiment ; for, as soon as I was enabled, by a practical observation of the indications of the disease, to form an opinion on the subject, I determined to treat cholera spasmodica similarly to fever. If, instead of introducing that method of treating it to him, he had first pointed it out to me, I should certainly have considered myself bound in honour to acknowledge my obligations to him, and I can feel nothing but contempt for the man who could act otherwise.



been induced to commit my observations to paper. For having introduced a treatment in this disease which did not previously exist, I thought it quite necessary that I should state in what stages of the disease I pursued this treatment, in case it might be adopted by others, and might not produce the same beneficial result, in consequence of its having been exhibited at an improper stage of the malady.

The mortality in this disease, may be very much diminished by attending strictly to its manifestations in its milder forms ; trifling diarrhœas—as they may be at first regarded—being, in most cases, only the precursors of the more serious types of the disease, if suffered to remain unchecked by medical treatment.

Indeed the chief reason why the mortality is so great, when the disease first appears in a district, is because the physician is unaware of the insidious nature of the pestilence with which he has to cope,—how it steals gradually and silently in, till it has gained the outworks ; when it attacks the citadel with a power and a rapidity which renders assistance unavailing ; and finally carries the strong-holds of life, before the astonished practitioner was scarcely ever aware of its presence—to drop metaphor, the medical man thrown off his guard by its equivocal symptoms, treats it as the common cholera of this country, till astounded by the rapidity of its progress, and its fatal termination, he finds too late the magnitude of the error into which he has been led. And I would take occasion to warn every practitioner of the necessity—after one case has occurred in a house—of laying the strongest injunctions upon its inmates to apply for medical aid, immediately



upon the slightest symptom of diarrhœa becoming apparent ; the good effects of which will soon be made manifest, for in those very houses where patients have been affected with choleric diarrhœa, in its most contagious and malignant form, the practitioner, by watching attentively the premonitory symptoms, and not tampering with them when they appeared, has been enabled most effectually and decidedly to check the progress of the disease ; and, while upon this branch of the subject, perhaps a few hints may not be altogether unacceptable either to the practitioner, or to the general reader. The diarrhœa pulmentaris is that species which is to be met with in the greatest majority of cases, but the disease cannot be said to assume a formidable appearance until the serosa type has exhibited itself ; but when the diarrhœa maligna manifests itself, the case generally speaking may be considered altogether hopeless, as asphyxia so quickly supervenes that remedies have not time to act ; and of the aptness of the disease to run out of one form into the others in a progressive ratio from bad to worse, innumerable instances might be adduced ; as also of its tendency to appear in a milder or more severe form according to the previous habits and constitution of the patient, and of the consequent degree of predisposition which existed in the person imbibing the contagion ; the disease in a second person not always bearing the type which exhibited itself in the person from whom he received the infection ; I saw this remarkably illustrated in the cases of John Baillie and Francis Smith ; these two men slept together, the former had a purging of gruelly matter for six days ; his companion took this same purge four days after his companion



had it, which in him ran in the space of two days into the watery purging, and carried him off. I have seen likewise a child who had merely the gruelly purge, but when it's mother herself was attacked it was first this, and then changed to the watery diarrhœa, and I have ascertained for a truth, that there was none near attacked with a more violent form of the disease from whom to receive the infection; indeed all my experience goes to prove, that, instead of the virulence of the contagion being weakened by its transmission from person to person—like an enemy despised, it gains strength and becomes more insatiable, as the number of its victims is augmented, “as if increase of appetite had grown by what it feeds on,” I have observed the like incidence in febrile diseases. In the case of Mr. and Mrs. Smith, the wife who was first attacked had such a slight diarrhœa that she felt scarcely any inconvenience from it until it ran into a more severe form; but her husband was seized with it, being probably more susceptible of the disease, it attacked him with greater violence and reached its acme in a much shorter space of time than in her; and this peculiarity in the disease will, I apprehend, afford the best solution of the much disputed problem as to the manner in which the contagion is propagated; a person comes from an infected district with the seeds of the disease about him, but, not being very susceptible of its influence, it does not shew itself in him, in a form sufficiently decided to be observed; but some among the inmates of the house in which he takes up his abode, having a stronger predisposition to the disease, imbibes the infection, from him and in this second person the malady shows itself in a more decided form,



and runs more quickly to its termination, and then the disease is said to have sprung up sporadically, and hence the doctrine of its non-contagion: This is an hypothesis which may furnish matter for the consideration of the anti-contagionists, and in which I must therefore beg to be excused by my reader for indulging. It will also serve to illustrate the importance of attending to slight diarrhoeas, and endeavouring to cure them in their milder forms when they are by no means intractable. Their cure must not however be attempted by such remedies as salt, mustard, &c. as these will only aggravate the evil, but they must be reduced by rational medical treatment; all the cases, which I treated in the incipient stage of cholera, recovered, and were not followed by the consecutive fever; the method I adopted was insufficient, I admit, to raise a patient from a state of complete asphyxia, but, as I have before observed, I believe every other remedy will be found equally unavailing in this stage of the disease, which will ever be distinguished from every other form of it, and, indeed, from every other disease, by the cold moist tongue and mouth, the blueness of surface, the icy coldness of the expired air, and the peculiar earthy odour which the body exhales. In conclusion, before taking a final leave of the subject for the present, I would strongly deprecate the use of *barbarous* remedies, in such a disease as the one now under consideration, where *none* are likely to succeed, especially as, notwithstanding the complete paralysis of the vital powers, those of the mind, and even the sensitive feelings in many cases remain to the very last as acute as ever; and however the application of boiling water and, red hot irons may be regarded by the rude and uncivilised



serfs of Russia, in this country it cannot fail to outrage the feelings of the relatives ; without—to say the least of it—being at all serviceable to the patient. Other remedies, such as Galvanism and Transfusion of medicines, have been also confidently recommended in the state of complete collapse ; the latter remedy I may, at some period—when remission of my present avocations affords me more leisure, consider more fully ; but, at present, I am convinced our wisest plan, when asphyxia has supervened, will be to avoid torturing the unfortunate patient by a multiplicity of painful applications ; as I am well convinced that, if nature herself cannot succeed in establishing a re-action in such a case, all the means, which have been hitherto resorted to, will be insufficient for that purpose.

FINIS.

